WARM-UP G

MAKING DECISIONS

This exercise lets students explore how decisions are made and practice solving problems that require choices. It is related to the activities entitled "Lifestyles and the Environment," "The Radon Game," "Designing a Clean-Air Environment," "Is Your Air Clean?," "Deciding the Clean the Air," "Choosing a Better Future," "The Business of Clean Air," "Air Pollution Allowance Trading," and "The Cost of Polluting."

CRITICAL OBJECTIVES

- Understand that solving problems requires a strategy or plan
- Recognize that "common sense" is really practiced decision-making
- Recognize that decisions involve trade-offs
- Understand that making decisions is part of everyone's life

SKILLS

- Listening
- Asking questions
- Comparing ideas
- Drawing conclusions

GUEST PRESENTERS

Guest presenters could include air quality engineers, economists, EPA environmental protection specialists, EPA policy analysts, or meteorologists.

BACKGROUND

Making decisions is an important part of life for everyone—students, executives, homemakers, shopkeepers, or scientists. Solving a problem requires comparing alternatives and thinking about the probable results of one's choices. Every choice, or decision, leads to certain direct results and more indirect results. Many choices will end up influencing or limiting future decisions. For example, choosing a hamburger for lunch might mean that one is less inclined to choose meatloaf for dinner. Or deciding to spend money for a new bike now may mean forfeiting the money for a new computer game. The worst kind of decisions are those made on a whim, without thinking through the consequences. The best kind of decisions are those made after thinking about the possible alternatives, and the advantages and disadvantages of each.

One way to begin a thoughtful decision-making process is to ask yourself questions and find honest answers for them. Typically, a number of limitations affect the quality or cost of the decisions we make. Cost does not necessarily mean money. It could also be any valuable thing

RELATED ACTIVITIES
1, 6, 8, 10, 15, 16, 17, 18, 19

TARGET GRADE LEVEL
3rd-9th

DURATION
40 minutes

VOCABULARY
Benefit
Cost
Risk

MATERIALS
Chalk
Chalkboard
(or flip chart and marking pens)

that is given up in order to implement the choice, such as time or lost opportunities. Clearly, there is a trade-off between getting all the best information and spending too much time fussing over the choice. Sometimes, one can spend so much effort collecting or weighing alternatives that you run out of time or money or both and loose much of the benefits of careful decision-making. Sometimes, what we all call "common sense" is the best decision, but if you think about it, simple common sense usually has a good reason behind it.

Many important decisions are made after a careful and formal analysis, sometimes called a "benefit-cost" analysis. It usually is structured by writing down all the advantages or "pros" on one side of a page, and all the disadvantages or "cons," on the other side. Then by comparing the pros and cons one can systematically arrive at a "best" decision. One mark of a good decision based on careful thought is that none of the results or consequences of the decision—good or bad—should come as a surprise. If one makes a decision with too little information about its consequences, then there is a greater "risk" involved that the decision may not solve the problem or that the decision may cause some other problem not thought of.

Making good decisions is a skill that comes about with practice and experience. Nobody is "born" with it. Also, the confidence that comes with practice often results in better and quicker decisions.

There are seven steps in good public decision-making:

(1) What is the problem or issue? Ignore all the complicating issues, or "red herrings," and articulate a clear, simple problem. Identify who and what may be affected by the problem, and who and what may benefit from the decision.
(2) What are the options for solving the problem? Leave out all the really unlikely solutions, and just list the ones that are most realistic. Keep them as straightforward as possible.
(3) Do I know enough about each alternative? Compare each alternative solution to the problem, and write down what is known and what we need to find out about each alternative.
(4) What are the advantages and disadvantages of each alternative? Sometimes, advantages or disadvantages include the effort required to get all the necessary information. If it seems that the effort, or "cost," of getting the necessary information outweighs the benefits, the decision-maker may need to consider his or her willingness to accept the consequent risks.
(5) Which advantages and disadvantages are critical? Cross out those that don't really matter; these are just confusing extras.
(6) Which of the options seem to best solve the problem, considering the advantages and disadvantages of each?
(7) Finally, share and discuss results publicly and with those affected by the decision even if you have already involved some of them in the process.

WHAT TO DO

1. Introduce the topic of decision-making to the class, write the seven decision-making steps on the chalkboard or flip chart and explain them.

2. Have the students suggest several real or invented air-pollution problems that require decisions to solve, such as, “Should I convert all my electric lights to energy-savers at home?” or “Why should we work to save the rain forest?” or “What is the best way I can contribute to the reduction of greenhouse gases?” or “How can we control the quality of the air in the classroom or school?” Assign one student to record on the chalkboard or flip chart suggestions by the students during the problem-solving process. You can use current events articles that raise issues yet unresolved as a means of jogging students’ thoughts on selecting problems. Have students formulate a problem statement for each question suggested.

3. Select a few problems to focus on and have students volunteer answers to each of the first six problem-solving steps. For each answer, get the student to specify which problem it addresses and which step it fits under. Note that the class can be considering all the problems at once. Allow students to question or comment on each others' suggestions.

4. Once each problem has answers under each of the first six steps, begin narrowing the selections by encouraging the class to evaluate each of the steps. Have the scribe annotate the chalkboard or easel as decisions are made. Encourage dissenters or skeptics, but get the class to consider all angles.

SUGGESTED MODIFICATIONS

- For lower grades, decision-making can be fun but also frustrating. Use a decision-making exercise that addresses group activities such as the best way to spend time. Let the students decide how the day or an hour should be spent, and why. Modify the seven decision-making steps, as appropriate, and use them to facilitate such a discussion. For lower grades, the decision-making steps may have to be stated more simply to help students participate in the process.

- For upper grades, have students develop a subset of questions (between the lines) to explore each of the seven decision-making steps in more depth. Use the expanded list to facilitate the discussion.

- You may want to ask a guest presenter to add to the list some real-world problems or issues with which he or she is currently working.

- Have students select a news clipping that raises a problem or issue that others are working to resolve. Assign a special project in which students will use the steps presented here to research and develop a potential resolution. When completed have the student present his or her findings and the rationale for the selected option.

SUGGESTED READING

Berry, Joy. *Every Kid's Guide to Decision Making and Problem Solving*. Children's Press (1987).

Citizenship with Bambi and Friends (Filmstrip). Walt Disney (1988).

The Environment (Apple II computer program). Tom Snyder (1990).
A role playing simulation in which students address crucial environmental questions.

I Don't Know What To Do: Decision-Making Skills (Videotape). Guidance (1988).

A Kid's Guide to Decisions (Filmstrip). Learning Tree (1988).

The Oil Game (Apple II computer program). AV System (1988).

Smith, Sandra Lee. *Coping with Decision-Making*. New York, NY: Rosen Publications Group (1989).

Ulrich-Hagner, Linda. *Decisions in Action*. South-Western Publishers (1988).

Understanding Decisions (Filmstrip). Learning Tree Publishing (1990).

Yes? No? Maybe? Decision Making Skills (VHS videotape). Sunburst (1990).